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# PATENT SPECIFICATION

DRAWINGS ATTACHED

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## COMPLETE SPECIFICATION

### Improvements in Lamp Holders

We, PRESSAC LIMITED, a British Company of Harrington Mills, Leopold Street, Long Eaton, Nottingham, do hereby declare the invention for which we pray that a Patent 5 may be granted to us and the method by which it is to be performed to be particularly described in and by the following statement:—

This invention relates to miniature lamp 10 holders for capless lamps of the kind usually termed "capless electric lamp" which normally comprises a flattened glass pinch along and from which extend lead-in wires which co-operate with contacts on the holder for engaging appropriate parts of a printed circuit.

It is desirable with lamp holders for capless lamps to ensure that the pinch of a bulb is correctly located and positively retained in position in the holder.

20 In our co-pending Patent Application No. 4183/64 (Serial No. 1,027,106) there is described a holder for capless lamps primarily intended for use with circuit boards.

According to our said Application No. 25 4183/64 (Serial No. 1,027,106) there is claimed an electric lamp holder for a lamp of the kind referred to and for fitting to circuit boards comprising a two-part moulding of synthetic plastics material, the parts 30 being locked together by tongues provided on the first part snapping into slots in the second part, the first of said parts being formed with a cavity for receiving a flattened glass pinch of the lamp, and the second part 35 being formed with one or more lamp retaining projections for engaging in notches in the flattened glass pinch of the lamp, the first part of the holder being fitted with a pair of springy electrically conductive contacts, which engage the complementary lead-in wires on the pinch of the lamp, and each

of which is formed with a bowed or other suitably shaped portion which spring-loads the pinch of the lamp to maintain the notches in the pinch of the lamp in engagement with said lamp retaining projections.

According to the present invention there is provided a lamp holder for use with a capless bulb of the kind referred to having a body formed internally with lamp locating projections adapted to engage in locating recesses or notches in the pinched base of the lamp, an having electrical contact making members each comprising a metallic strip formed to provide a main portion and which is returned at one end of said main portion to provide a bowed portion, said metallic strip extending from the other end of said main portion to provide a terminal part.

The invention is not limited to holders for capless lamps for use with printed circuit boards, but can advantageously be incorporated in holders which are engaged in holes in instrument panels.

Additionally, the application of the present invention is not limited to a holder comprising a two-part moulding as described in our said co-pending Patent Application No. 4183/64 (Serial No. 1,027,106) but can be applied to one-piece holders such as are described and illustrated in our co-pending Patent Application No. 1996/65 (Serial No. 1,046,859) according to which there is provided a lamp holder for capless electric lamps which comprises a one-piece moulding of synthetic plastics material and incorporating electric contacts for engagement with the wires on the pinch of a bulb and wherein the lamp-receiving end or mouth of the holder is formed with an integral projection for engaging in the lamp locating recess provided in the sides of the base of a capless lamp

[Price]

of the type generally known as a wedge base lamp.

The springy contact strips having the bowed portions may be of different constructions, e.g. the bowed portions may be provided on a pair of line contacts fitted to conductor wires projecting out through the base of the holder, or a bowed portion may be provided on an earth contact which extends through the the side or mouth of the holder so as to engage an earthing member, e.g. a metal chassis of an instrument panel or an earthing part of a circuitary.

To enable the invention to be clearly understood, embodiments thereof will now be described by way of example with reference to the accompanying drawings, wherein:—

Figure 1 is a vertical section through a lamp holder for use with a printed circuit board 20 and constructed in accordance with our co-pending Patent Application No. 4183/64 (Serial No. 1,027,106). Figure 2 is a fragmentary view of a holder showing how the bowed portion of the contact of a lampholder 25 according to the present invention can be formed in an earth contact strip.

Figure 3 is a diagrammatic view showing how said bowed portions may be formed in line contacts, and

50 Figure 4 is an enlarged perspective view of one of the contacts shown in Figure 3.

Referring firstly to Figure 1 of the drawings, which shows a typical lamp holder intended for use with a printed circuit board 55 and is constructed as a two-part moulding as described in our co-pending Patent Application No. 4183/64 (Serial No. 1,027,106). These parts are indicated at 1 and 2 and are made as mouldings of a suitable synthetic 60 plastics material.

The part 1 is formed with a cavity 1a in which is received a flattened glass pinch 3 of a lamp 4 of the capless type. The part 1 is formed at its mouth with a surrounding ledge 5 formed with a pair of upstanding locking tongues 6 formed adjacent to their lower ends with shoulders 7 and which tongues 6 are engageable through slots 8 in the floor 8a of the second part 2. The 50 arrangement is such that when the tongues 6 of the part 1 are inserted through the slots 8 of the part 2 from below, the tongues 6 when fully inserted through the slots 8 snap outwardly so that the shoulders 7 engage over the floor 8a of the part 2 adjacent to said slots as shown.

The floor 8a of the part 2 is formed with an opening 9 through which can be inserted the flattened glass pinch 3 of a lamp 4 and the floor 8a of the part 2 is also formed at opposite sides and ends with downwardly and inwardly directed projections 10 which constitute lamp-retaining projections which engage in notches or recesses 11 preformed in

the upper end of the flattened glass pinch 3 65 of the lamp.

The said recesses or notches 11 of the lamp are yieldingly urged into engagement with the lamp retaining projections 10 by bowed parts 12 of a pair of electrically conductive contacts 13 (only one of which is visible). The bowed part 12 of each contact is directed towards the pinch of a lamp and exerts a sideways thrust on the pinch 13 of the lamp to ensure that the projections 10 of the part 2, and which extend into the cavity 1a of the part 1, engage in the lamp recess or groove 11 with a snap action.

75 The contact strips are fashioned so as to extend out of the holder and terminate in portions 14 which engage the appropriate part of a printed, etched or die stamped circuit board, not shown.

80 The holder is secured in an opening in a circuit board by flange portions 25 engaging one side of the board and tapered portions 2e engaging the other side of the board, this fixing forming no part of the present invention.

85 As shown in Figure 2, the said bowed portion 12 of an electrical contact making member may comprise a part of an earth contact 15 made of springy strip material and having a main body portion 18 from which projects on the opposite side thereof to the said bowed portion 12 a prong 17 which snaps over abutments formed internally of the holder to prevent withdrawal of the contacts after they have been inserted into the holder through openings in the base thereof, and a terminal part 19. In this case the earth 90 contact would be used in conjunction with a line contact.

95 The projections 10 need not be formed on one of the members of a two-part moulding as shown in Figure 1, but can form integral parts of a one-piece moulding as described in our co-pending Patent Application No. 19996/65 (Serial No. 1,046,839). In this respect this latter Application describes many other forms of holders to which the present invention is applicable, e.g. lamp holders of the kind which are adapted for mounting in apertures in an instrument panel.

100 The lamp holder illustrated in Figure 3 is adapted for panel mounting and also shows how the bowed portions 12 of an electrical contact making member can be provided on line contacts 16 connected to the ends of leads extending out of the base of the holder. Such contacts 16, as more clearly shown in Figure 4, are formed with a main body portion 18 from which project on the opposite side thereto to the said bowed portion 12 pressed out prongs 17 which snap over abutments formed internally of the holder to prevent withdrawal of the contacts after they have been inserted into the holder through openings in the base thereof.

110 It will be appreciated that in all cases the

holder is formed with two lamp locating projections directed towards opposite sides and opposite edges of the pinch of a lamp, the two sides of said pinch being formed with locating recesses or notches.

WHAT WE CLAIM IS:—

1. A lamp holder for use with a capless bulb of the kind referred to having a body formed internally with lamp locating projections adapted to engage in locating recesses or notches in the pinched base of the lamp, and having electrical contact making members each comprising a metallic strip formed to provide a main portion and which is returned at one end of said main portion to provide a bowed portion, said metallic strip extending from the other end of said main portion to provide a terminal part.

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2. A lamp holder for use with a capless bulb of the kind referred to in Claim 1, wherein the said electrical contact making members are constructed substantially as shown in Figure 2 of the accompanying drawings.

3. A lamp holder for use with capless bulbs of the kind referred to as claimed in Claim 1, wherein the electrical contact making members are constructed substantially as shown in Figures 3 and 4 of the accompanying drawings.

4. A lamp holder for use with capless bulbs of the kind referred to, substantially as herein described with reference to the accompanying drawings.

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COMPLETE SPECIFICATION

1 SHEET

*This drawing is a reproduction of  
the Original on a reduced scale*

